EXHIBIT A

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Burgess et al.

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(54) **CONTROLLER FOR VIDEO GAME CONSOLE**

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A63F 9/24 (2006.01)
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(52) **U.S. Cl.**
USPC ..... **463/37**; 463/36; 463/46; 463/47; 200/5 R; 200/5 A; 200/329; 200/341; 200/345

(58) **Field of Classification Search**
USPC 463/37
See application file for complete search history.

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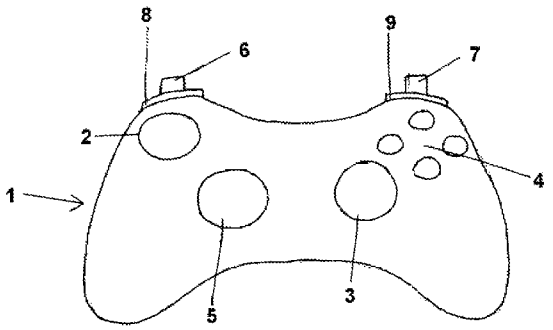
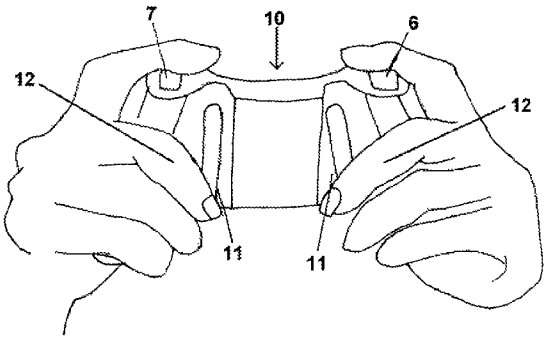
(57) **ABSTRACT**

An improved controller (**10**) for a game console that is intended to be held by a user in both hands in the same manner as a conventional controller (**1**), which has controls on the front operable by the thumbs (**2**), (**3**), (**4**), (**5**), and has two additional controls (**11**) located on the back in positions to be operated by the middle fingers of a user.

20 Claims, 2 Drawing Sheets





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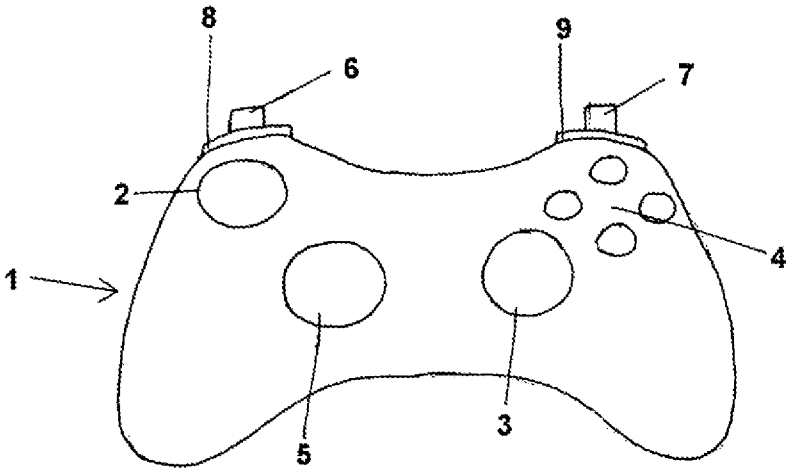

Figure 1

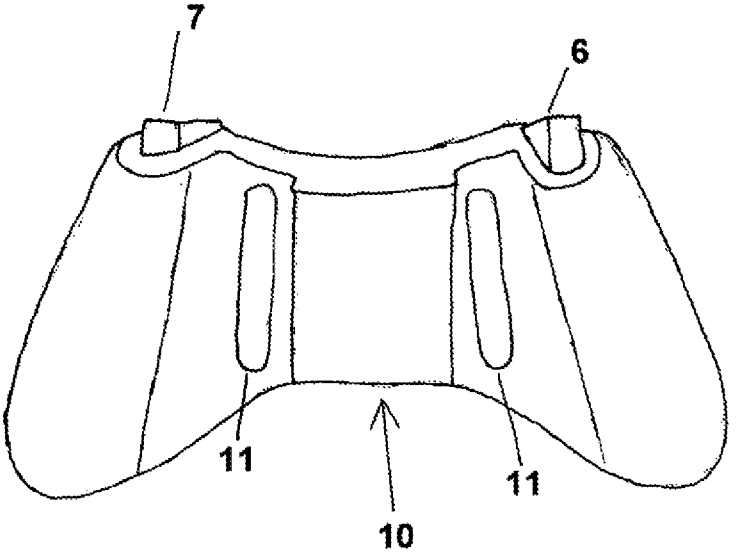

Figure 2

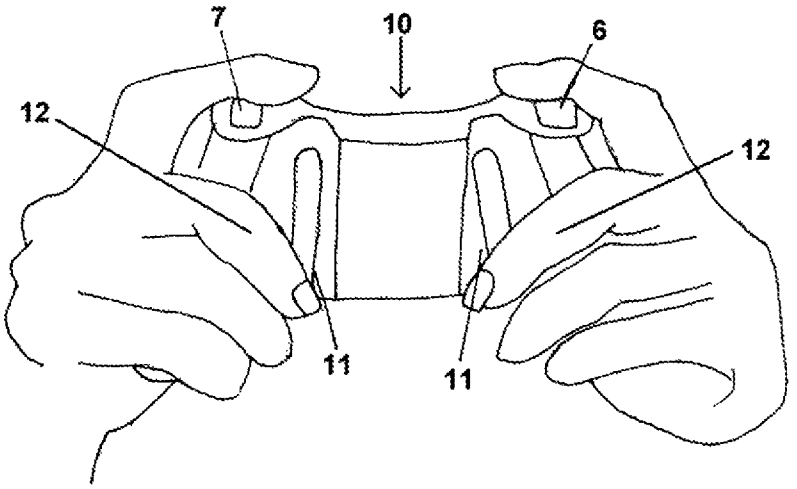

Figure 3

CONTROLLER FOR VIDEO GAME CONSOLE

BACKGROUND OF THE INVENTION

The present invention relates to video game consoles, in particular to hand held controllers for video game consoles.

Conventional controllers for most game consoles are intended to be held and operated by the user using both hands. A conventional controller will generally comprise a hard outer case with a plurality of controls mounted about the controller. Typically the controls include buttons, analogue control sticks, bumpers, and triggers. An example of a conventional controller is shown in FIG. **1**.

As can be seen in FIG. **1**, all of the controls are mounted on the front and top edge of the controller **1**. Specifically, there are left and right analogue thumb sticks **2**, **3** which normally control movement and are intended to be operated by the user's left and right thumb respectively. There are four buttons **4**, located on a front right portion of the controller **1** which normally control additional actions and are intended to be operated by the user's right thumb. There is a direction pad **5** located on the lower portion of the front left of the controller **1**. The direction pad **5** is intended to be operated by the user's left thumb, typically either as an alternative to the left thumb stick **2** or to provide additional actions. There is a left trigger **6**, a right trigger **7**, a left bumper **8**, and a right bumper **9** located on the top edge of the controller **1**. The left and right triggers **6**, **7** are typically operated by the user's index fingers. The left and right bumpers **8**, **9** may also be operated by the user's index fingers.

The only way to operate the four buttons **4** is for the user to remove his or her right thumb from the right thumb stick **3**. This takes time and, in some games, can cause a loss of control. This is a particular problem in games where the right thumb stick **3** is used for aiming. A similar problem may arise in games where the direction pad **5** provides additional actions and the user has to remove his or her thumb from the left thumb stick **2** in order to operate the direction pad **5**.

In light of the above, there is a need for an improved controller which removes the need for a user to remove his or her thumb from the left or right thumb stick **2**, **3** in order to operate additional actions controlled by the four buttons **4** and/or the direction pad **5**.

SUMMARY OF THE INVENTION

The present invention provides a hand held controller for a video game console having a hard outer case and a plurality of controls located on the front and top edge of the controller. The controller is shaped to be held in both hands of the user such that the user's thumbs are positioned to operate controls located on the front of the controller and the user's index fingers are positioned to operate controls located on the top edge of the controller. The controller further includes one or more additional controls located on the back of the controller in a position to be operated by the user's other fingers.

In one embodiment, each additional control is an elongate member which is inherently resilient and flexible such that it can be displaced by a user to activate control function.

Preferably, each elongate member is mounted within a respective recess located in the case of the controller.

Preferably, each elongate member comprises an outermost surface which is disposed in close proximity to the outermost surface of the controller such that the user's finger may be received in said respective recess.

Preferably, each elongate member has a thickness less than 10 mm thick, more preferably less than 5 mm thick, and most desirably between 1 mm and 3 mm.

Preferably, there are two additional controls which are elongate members that are parallel to each another. In another embodiment, the elongate members converge towards the front end of the controller with respect to one another.

Optionally, a portion of each of the elongate members is in registry with a switch mechanism disposed within the controller, such that displacement of the elongate member activates the switch mechanism.

Optionally, a switch mechanism is disposed between the elongate members and an outer surface of the controller.

The controller of the present invention may be very similar to controllers according to the prior art. In particular, the outer case of the controller and the type, number and positioning of the controls located on the front and top edge of the controller may be the same as a controller according to the prior art, as described above and as illustrated in the figures.

The controller of the present invention is particularly advantageous over controllers according to the prior art as it comprises one or more additional controls located on the back of the controller in a position to be operated by middle fingers of a user. The additional controls may either replicate the functions of one or more of the controls located on the front or top edge of the controller or provide additional functionality.

In a preferred embodiment of the invention the additional controls replicate the function of a control located on the front of the controller. This means that a user does not need to remove his or her thumb from one of the thumb sticks in order to operate the buttons and/or direction pad located on the front of the controller and can instead perform the function by manipulating an additional control located on the back of the controller with a finger.

Alternatively, the additional controls may provide additional functionality in that they do not replicate the function of controls located on the front or top of the controller but may perform different functions. In this manner a controller according to the present invention may provide more functions than prior art controllers.

Preferably, the controls located on the back of the controller are paddle levers. Suitable paddle levers may be formed integrally with the outer case of the controller or may be substantially separate from the outer case. This may be done in any manner apparent to the person skilled in the art. However, it is to be appreciated that the additional controls may comprise any other control suitable for use by a hand held controller.

Advantageously, if the additional controls are paddle levers, they will be formed such that they are substantially vertically aligned with respect to the controller. This may allow the most ergonomically efficient activation of the paddle levers by the middle fingers of the user.

Further features and advantages of the present invention will be apparent from the specific embodiment illustrated in the drawings and discussed below.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a schematic illustration of the front of a conventional game controller according to the prior art.

FIG. **2** is a schematic illustration of the back of a game controller according to the present invention.

FIG. **3** is a schematic illustration of the back of a game controller according to the present invention as held and operated by a user.

DETAILED DESCRIPTION OF THE INVENTION

The particular embodiment described below and illustrated by FIGS. **2** and **3** serves to further illustrate the invention, to provide those of ordinary skill in the art with a complete disclosure and description of the devices claimed herein, and is not intended to limit the scope of the invention. For example, the additional controls are described below as two paddle levers but the term "control" as used in the claims, unless otherwise made clear in the claim, refers to paddle levers as well as other controls such as buttons, analogue control sticks, bumpers, and triggers.

The game controller **10** according to the present invention is illustrated in FIGS. **2** and **3**. The front of the game controller **10** of FIGS. **2** and **3** is the same as a conventional controller **1**, as illustrated in FIG. **1** and as discussed above. Therefore, where appropriate the same reference numerals have been used to indicate the features of the controller according to the present invention **10** that are identical to the features of a conventional controller **1**.

Game controller **10** differs from the conventional controller **1** in that it additionally comprises two paddle levers **11** located on the back of the controller. The paddle levers **11** are vertically orientated with respect to the controller **10** and are positioned to be operated by the middle fingers of a user **12**, as shown in FIG. **3**.

In one embodiment the paddles **11** are formed from a thin flexible material such as a plastics material for example polyethylene. Preferably, the paddles **11** are less than 10 mm thick, but may be less than 5 mm thick, and more preferably are 3 mm thick or less.

The paddles **11** are inherently resilient, which means that they return to an unbiased position when not under load. A user may displace or depress either of the paddles **11** by engaging an outer surface thereof; such displacement causes the paddle **11** to activate a switch mechanism mounted within the body of the controller **10**. The paddles **11** are mounted within recesses located on the case of the controller **10**; and are disposed in close proximity to the outer surface of the controller body. In this way a user may engage the paddles **11** with the tips of the fingers, preferably the middle fingers, without compromising the user's grip on the controller **10**. While the example shows the paddles **11** engaged by the middle fingers, they could also be engaged by the index, ring, or little fingers. The index fingers may also engage trigger style controls mounted on the top edge of the controller **10** while the thumbs may be used to activate controls on the front of the controller **10**.

The paddles **11** are elongate in shape and substantially extend in a direction from the top edge to bottom edge of the controller **10**. In one embodiment the paddles are orientated parallel with each other. In an alternative embodiment the paddles are orientated such that they converge towards the top edge with respect to each other. This elongate shape allows a user to engage the paddles with any of the middle, ring, or little finger; it also provides that different users having different size hands can engage with the paddles in a comfortable position thereby reducing the effects of prolonged or repeated use such as repetitive strain injury.

In one embodiment, the paddle levers **11** replicate the functions of two of the four buttons **4** located on the front of the controller **10** and thereby allow a user to operate the functions of the relevant buttons using his or her middle fingers **12**, without the need to remove either of his or her thumbs from the left or right thumb stick **2**, **3**. In alternative

embodiments a paddle lever **11** may activate a new function not activated by a control on the front or top edge of the controller **10**.

It is envisaged that the paddles **11** could be fitted to an existing controller **10**. In such embodiments the paddles would be mounted on the outer surface of the controller body by means of a mechanical fixing such as a screw or bolt or alternatively bonded or welded to the controller body by adhesive or other suitable means. A switch mechanism would be mounted within the controller in vertical registry with a portion of each paddle. A portion of the switch mechanism may extend through the controller body and be disposed in close proximity or in contact with an innermost surface of the paddle **11**.

In alternative embodiments it is envisaged that the paddles **11** would be integrally formed with the controller body, the paddles **11** being configured to be resilient and flexible such that they can be depressed by a user to activate a switch mechanism. This could be achieved by moulding the controller body to have a U-shaped slot extending through the controller body; alternatively a U-shaped slot could be cut into the controller body after the moulding process.

Preferably, the paddles **11** would comprise a raised outermost surface with respect to the surrounding area such that a user may locate the paddles **11**. This may be achieved by moulding the paddle such that is thicker than the surrounding area. It will be recognised that as used herein, directional references such as "top", "bottom", "front", "back", "end", "side", "inner", "outer", "upper", and "lower" do not limit the respective features to such orientation, but merely serve to distinguish these features from one another.

Modifications and variations of the present invention will be apparent to those skilled in the art from the forgoing detailed description. All modifications and variations are intended to be encompassed by the following claims. All publications, patents, and patent applications cited herein are hereby incorporated by reference in their entirety.

The invention claimed is:

1. A hand held controller for a game console comprising:

an outer case comprising a front, a back, a top edge, and a bottom edge, wherein the back of the controller is opposite the front of the controller and the top edge is opposite the bottom edge; and

a front control located on the front of the controller;

wherein the controller is shaped to be held in the hand of a user such that the user's thumb is positioned to operate the front control; and

a first back control and a second back control, each back control being located on the back of the controller and each back control including an elongate member that extends substantially the full distance between the top edge and the bottom edge and is inherently resilient and flexible.

2. The controller of claim **1**, further having a top edge control located on the top edge of the controller and wherein the controller is shaped such that the user's index finger is positioned to operate the top edge control.

3. The controller of claim **2**, wherein at least one of the back controls replicates the function of one or more of the top edge control and the front control.

4. The controller of claim **2**, wherein at least one of the back controls has functions in addition to the top edge control and the front control.

5. The controller of claim **2**, wherein the top edge is substantially perpendicular to the front.

6. The controller of claim **1**, wherein each of the back controls is positioned to be operated by a middle finger of a user.

7. The controller of claim **1**, wherein each elongate member is mounted within a recess located in the case of the controller.

8. The controller of claim **7**, wherein each elongate member comprises an outermost surface which is disposed in close proximity to the outermost surface of the controller such that a user's finger may be received in said respective recess.

9. The controller of claim **1**, wherein each elongate member has a thickness between about 1 mm and 10 mm.

10. The controller of claim **1**, wherein each elongate member has a thickness between about 1 mm and 5 mm.

11. The controller of claim **1**, wherein each elongate member has a thickness between about 1 mm and 3 mm.

12. The controller of claim **1**, wherein the elongate members are parallel to one another.

13. The controller of claim **1**, wherein the elongate members converge towards the front end of the controller with respect to one another.

14. The controller of claim **1**, wherein a portion of at least one of the first back control and the second back control is in registry with a switch mechanism disposed within the controller, such that displacement of the at least one back control activates the switch mechanism.

15. The controller of claim **1**, wherein a switch mechanism is disposed between each of the elongate members and an outer surface of the back of the controller.

16. The controller of claim **1**, wherein at least one of the back controls is a paddle lever.

17. The controller of claim **1**, wherein at least one of the back controls is substantially parallel to the front of the controller.

18. The controller of claim **1**, wherein at least one of the back controls is formed as an integral part of the outer case.

19. The controller of claim **1**, wherein at least one of the back controls is formed separate from the outer case of the controller.

20. A hand held controller for a game console comprising:

an outer case comprising a front, a back, a top edge, and a bottom edge, wherein the back of the controller is opposite the front of the controller and the top edge is opposite the bottom edge;

a front control located on the front of the controller, wherein the controller is shaped to be held in the hand of a user such that the user's thumb is positioned to operate the front control; and

a first back control and a second back control, each back control being located on the back of the controller and each back control including an elongate member that extends substantially the full distance between the top edge and the bottom edge.

* * * * *